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**A revision of the species of *Euclea*, *Parasa* and *Packardia*,
with notes on *Adoneta*, *Monoleuca* and
Varina ornata Neum.**

BY HARRISON G. DYAR.

Genus **EUCLEA** Hüb.

1816.—*Euclea* Hüb., Verz. bek. Schmett., 149.

1860.—*Nochelia* Clem., Proc. Acad. Nat. Sci., 160.

1864.—*Euclea* Packard, Proc. Ent. Soc. Phil. iii, 336.

Genus **PARASA** Moore.

1854.—*Næra* Her.-Sch., Samml. Ansser. Schmett., 176.

1859.—*Parasa* Moore, Cat. Lep. Ins. East India Co., 413.

1864.—*Callochlora* Pack., Proc. Ent. Soc. Phil. iii, 339.

These genera are separable by the following characters. In *Euclea* the second subcostal venule arises just beyond the end of the discal cell, remote from the origin of the first subcostal, while the first and second median venules arise as far apart as the second and third; in *Parasa* the second subcostal venule arises just within the cell, close to the first subcostal, and the first and second median venules arise almost from a common point. Otherwise the venation is the same. In the fore wings the s.-c. vein is remote from the costa and the costal arises from its base; five s.-c. nervules, the origins of the third and fifth approximately trisecting the vein beyond the cell; discal cross-vein twice angulated, the independent vein arising from its upper third; a bifid false discal vein; median four-branched; submedian present; internal bifid at base. The hind wings have the same venation in both genera.

Mr. E. L. Graef has very kindly loaned me his specimens of these genera which comprise nearly all the species, and, from an examination of them, I have been enabled to complete this paper. The species may be separated in the following manner:

- Thorax brown Genus **Euclea**.
 Green of primaries not covering cell.
 Spots rounded, discal dot round **nana** Dyar.
 Spots angular, discal dot elongated.
 A ferruginous patch beyond subterminal line **ferruginea** Pack.
 No such patch **cippus** Cram.
 Green confined to small basal and subapical spots...var. **delphinii** Bd.
 Basal patch larger, bifid var. **querceti** H.-S.
 Patches connected by a row of dots.var. **interjecta** Dyar.
 Green forming continuous band var. **monitor** Pack.
 Green of primaries covering cell.
 Sinus above internal margin distinct, filled in with rust-red.
 Discal dot present **elliottii** Pears.
 Discal dot absent **pænulata** Clem.
 Sinus obsolescent, not discolored. **incisa** Harv.
 Thorax green Genus **Parasa**.
 Breadth of green band over one-third the length of costa **viridus** Reak.
 Less than one-third **chloris** H.-S.

Euclea nana n. sp. (Plate iv, fig. 15).

Primaries: costa straight, apex subacute, outer margin convex, inner margin nearly straight, then rounded to base. Dark glossy walnut-brown, darker than *cippus* (of the same color as some Florida examples of *cippus*), a very small round black discal dot in the cell, not elongated as in *cippus*. Two pea-green patches of considerable size, both rounded and edged outwardly and below with silvery white and black. The larger patch occupies the space below the cell, not reaching the base of the wing and narrowly separated from the internal margin, rectangularly excavated opposite the outer third of the margin, the sinus partly filled in with a patch of orange ferruginous scales that tends to be bisected on the submedian vein. The patch extends beyond the end of the green patch, reaching the obsolete subterminal line, which is lost in the ground color. The other green patch is almost circular, in one example produced inwardly a little above the discal dot. It is very narrowly separated from the first patch and almost reaches the costa. It represents the subapical patch of *cippus*, but shows no tendency to become divided. It is followed by the usual orange ferruginous patch, trisected by the nervules and reaching the obsolete subterminal line. Fringes concolorous with primaries, interlined with paler at the base. Secondaries scarcely paler than primaries, concolorous. Below, concolorous with secondaries above, paler along internal margin of primaries and base of fringe. The thorax is dark like the fore wings, as in the basal tuft and tip of abdomen. Expanse of wings 18–20 mm.

Hab.—Florida. Types, two males, in the collection of Mr. Graef.

I cannot find that this species has been figured or described before. I have seen it in collections labeled *querceti* and *quercicola*, but it does not correspond at all with Herrich-Schäffer's figure of these forms. It differs from *E. cippus* var. *monitor* in its smaller size, round, minute, discal dot; the green spots being rounded and not triangular, the lower elliptical, less deeply excavated than in *cippus*, the upper almost circular, not divided. The red patches are smaller than in *cippus*, and are distinctly divided by the veins.

Euclea ferruginea Packard.

1864.—Pack. Proc. Ent. Soc. Phil. iii, 338.

This species is marked like *E. var. delphinii*, but has in addition a ferruginous patch beyond the subterminal band. It is closely allied to *E. cippus*.

The following is Dr. Packard's description:

"♂ more reddish than the other species. . . . Basal green spot small, slightly indented externally. Middle subapical spot" [of the three subapical green spots which are very variable, often confluent] "large; lower one obsolete, with a few scales connecting it with the reddish discal spot, which is margined above with brown. Beyond the green spots the wing is suffused with rust-red, of a lighter blue than any of the other species. Outer edge darker, like the costa. Beneath both wings are alike, almost testaceous. Fringe brown." Habitat, Canada. Expanse 30 mm.

The larva is unknown.

Euclea cippus Cramer (Plate iv, figs. 1-11).

1779.—Cram., Pap. Exot. i, 84, pl. liii, fig. E, *delphinii* Boisduval.

1832.—Bd., Cuvier's An. King. (Griffith) pl. ciii, fig. 6, *strigata* Boisduval.

1832.—Bd., Cuvier's An. King. (Griffith) pl. ciii, fig. 7 (larva) *querceti* Her.-Sch.

1854.—Her.-Sch., Samml. Auss. Schmiett. fig. 174, *quercicola* Herrich-Schäffer.

1854.—Her.-Sch., Samml. Auss. Schmiett. fig. 175, *tardigrada* Clemens.

1860.—Clem., Proc. Acad. Nat. Sci. 160, *Nochelia** *monitor* Packard.

1864.—Pack., Proc. Ent. Soc. Phil. iii, 327.

1881.—French, Papilio i, 145 (larva). *bifida* Packard.

1864.—Pack., Proc. Ent. Soc. Phil. iii, 338.

Thorax and primaries dark brown (burnt umber), occasionally russet or dark glossy walnut-brown (the latter color is exemplified in a specimen from Florida before me), with an elongated elliptical black spot of raised scales in the centre of the discal cell. An oblique green band, more or less interrupted, occupies the basal third of the wing below the cell and runs narrowly around the cell, widening centrally and subapically, but nowhere reaching the base or margin of the wing. It is deeply excavated opposite the middle of the internal margin, the sinus filled in with a large rust-red spot; another similarly colored, but smaller spot succeeds the subapical portion of the band. Both these spots precede the obscure, purplish, subterminal line. The green is narrowly bordered outwardly and below with silvery white and narrowly surrounded by black. Abdomen and secondaries colored like the thorax or paler. Below, concolorous with secondaries above. Expanse ♂, 20-26 mm.; ♀, 23-30 mm.

Var. **delphinii** Boisd (Plate iv, figs. 1-3).

quercicola H.-S.

tardigrada Clem.

The green is confined to a small triangular patch at the base below median vein, often slightly excavated externally, and a still smaller subapical patch.

Var. **querceti** H.-S. (Plate iv, figs. 4-6).

bifida Pack.

The green patches are larger than in the above, and the basal one is bifid, sending out a narrow line of green above the rust-red spot.

Var. **interjecta** W. Var. (Plate iv, figs. 7, 8).

I propose this name for the specimens connecting var. *querceti* with var. *monitor*, in which a line of two or more little green dots connects the outer part of the basal green patch with the subapical one. These dots become larger and run together in specimens that are near *monitor*.

* This is Clemens' description: "♂.—Body and fore wings rather dark reddish brown, with a small, nearly triangular pea-green patch, narrowly bordered with dark brown, at the base of the wing beneath the median nervure, slightly excavated behind, where it joins a bright brown patch. Toward the hind end of the disc [cell], in its middle, is a minute, oval, dark brown streak; two small, pea-green, subapical spots, the one nearest the costa minute." It evidently refers to the var. *delphinii*. Clemens also describes the genus and the larva of his species, but the characters are all borne out by specimens of *Euclea cippus*.

Var. **monitor** Pack.* (Plate iv, figs. 9-11).

In this the green forms a complete band, excavated above the middle of the internal margin. Harris gives a good figure of it in "Insects Injurious to Vegetation," page 420.

The above varieties are all connected by intergrading forms.

The larva is elongate, rounded, the dorsal region flat, nearly level, of uniform width, rounded at the extremities; sides nearly perpendicular. Head whitish, labrum and sutures of clypeus yellowish; ocelli black; jaws dark brown; retracted beneath joint 2. Along the subdorsal ridge of the body on each side is a row of elongated spinose tubercles, on joints 3 to 13 inclusive; those on joints 3, 4, 5, 11, 12 and 13, about three times as long as the others. The spines are short, black, and arise from conical bases. Another lateral row of spinous tubercles beginning on joint 3, those on joints 6 to 12 situated above the spiracles (none on joint 5) the one on joint 4 about as long as the subdorsal one, the others of uniform length, longer and rather slenderer than the short subdorsal ones. A row of dorsal and lateral elliptical depressions, each containing two irregular whitish dots, only appearing distinctly when the body is retracted. The body is covered with very minute transparent granulations. Spiracles very small, circular, projecting, yellowish.

The larva varies much in color, from sordid purplish to green; there is a subdorsal band covering the row of tubercles which varies from ferruginous through yellow to green (it may be concolorous with the body) sometimes narrowly and irregularly edged with black or crimson, but always thrice interrupted by a subquadrate spot of red or dark brown, viz., between joints 6 and 7, 9 and 10, 11 and 12. Length, 12 mm.; width, 6 mm.; height, 4 mm.

Hab.—Atlantic States to Mississippi Valley, South America (?).

Euclea elliotii Pearsall (Plate iv, figs. 12, 13).

1887.—Pearsall, Ent. Amer. ii, 209.

Closely allied to *E. pænulata*, from which it differs only in the presence of the discal dot and the somewhat smaller size of the green patch which does not reach quite so near to the costa, nor exactly to

* This variety comes nearest to Cramer's figure of *cippus*. I have had some doubt about referring the species to *cippus* at all, as I have never seen a specimen that exactly corresponds to Cramer's figure in which the green band is broken into three triangular spots; but this may occur. The figure is too poor to base critical remarks upon, but it seems extremely probable that it is the present species that was intended. However, if this should not prove satisfactory, there are plenty of other names, as may be seen from the above synonymy. There is no doubt about the figure of *delphinii*.

the subterminal line. The narrow space between the obscure subterminal line and the green patch is filled in with a rust-red shade.

The larva, as described by Mr. Pearsall, does not seem to differ from Prof. French's description of *E. pænulata* more than is the case in many examples of *cippus*, and I expect that a good series of moths will show that we have to do with but one species. I have been able to examine but one specimen of *pænulata* and four of *elliotii*, among the latter the type of the species by the kindness of Mr. Pearsall.

Hab.—Middle States.

The specimens figured in the plate I owe to the kindness of Dr. Packard.

Euclea pænulata Clemens (Plate iv, fig. 14).

1860.—Clemens, Proc. Acad. Nat. Sci. Phil. 159.

1881.—French, Papilio i, 144.

Thorax and primaries dark brown, the green patch on the wings similar to that of *cippus* in its exterior and interior outline, but extending outwardly to the subterminal line and much further basally over the cell, reaching the base of the wing, but not extending on to the costa. It is edged with silvery white outwardly and below, and narrowly with black, and the sinus above the middle of the interior margin contains a large rust-red spot as in *cippus*. The brown space along the costa widens toward the base. Secondaries paler brown; underside still paler, concolorous. Expanse 28 mm.

Hab.—Illinois.

Prof. French describes the larva, which is very similar to that of *cippus*, but lacks the subquadrate spots, which interrupt the subdorsal bands of that species.

Euclea incisa Harvey (Plate iv, fig. 16 ♂, 17 ♀).

1876.—Harv., Can. Ent. viii, 5, *Parasa*.

1877.—Grote, Can. Ent. ix, 85, *Euclea*.

Primaries wood-brown, nearly covered by a large green patch more extensive than in *pænulata* Clem., slightly waved opposite the cell, and rectangularly excavated opposite the outer third of the internal margin, much more distinctly in the male than in the female. The patch is edged outwardly and below with a darker line, and is but very narrowly separated from the costa and internal margin, more broadly just at the base of the costa. Secondaries pale testaceous, unicolorous. Below concolorous with secondaries above. The thorax is dark brown, the abdomen pale. Expanse ♂ 26 mm.; ♀ 32 mm.

Hab.—Texas.

Mr. Grote carefully separates this species from *Euclea pænulata* Clem.

I know of no description of the larva. The species seems, in some respects, intermediate between the genera *Euclea* and *Parasa*, and it will be very interesting to observe the affinities of the larva when found, as the larvæ of these genera differ decidedly.

Parasa viridus Reakirt* (Plate iv, fig. 18).1864.—Reak., Proc. Ent. Soc. Phil. iii, 251, *Limacodes*.*vernata* Packard.1864.—Pack., Proc. Ent. Soc. Phil. iii, 339, *Callochloa*.

Primaries wood-brown, the pea-green patch smaller than in *incisa* Harv. It is separated by a brown line from the costa and reaches the internal margin, but is not excavated, being only slightly waved above the internal margin. It reaches the base of the wing only along the margin, being replaced by a triangular patch of the ground color which rests upon the costa. The green is bordered with a narrow brown line, and the veins in the terminal space are marked with brown. A blackish brown shade along the center of the outer margin. Secondaries yellowish testaceous, the fringe shaded with brown. Thorax pea-green; abdomen yellowish testaceous. Below, concolorous with the secondaries above, the fringe brown. Expanse about 25 mm.

Hab.—Middle States.

A number of references to descriptions of the larva may be found in Mr. Henry Edwards's catalogue of transformations of N. A. Lepidoptera under "*Parasa chloris*."

Parasa chloris Herrich-Schäffer (Plate iv, fig. 19).

1854.—Her.-Sch., Samml. Ansser. fig. 176.

fraterna Grote.

1881.—Grote, Papilio i. 5.

1887.—Hy. Edwards, Ent. Amer. iii, 169.

Very similar to *P. viridus* Reak., but the green band is still narrower. Primaries wood-brown, crossed by an oblique pea-green band that is separated by a brown line from the costa, and is continued along the internal margin to the base of the wing. The band is edged with brown, but there is no blackish shading in the terminal space, though the veins are marked with brown. Secondaries pale yellowish at base the outer half wood-brown. Below, yellowish testaceous; costa, outer third of primaries and fringes, brown. Thorax pea-green; abdomen largely tinged with brown. Expanse about 20 mm.

Hab.—Middle States.

The larva is somewhat ovate in outline as seen from above, the last segment being produced into a little pointed tail. The dorsal region is flat, highest at joint 5, and diminishes to the extremities. The subdorsal ridges bear each a row of large round warts covered with spines, those on joints 3, 4, 5, 11 and 12 the largest, the rest much smaller; a similar row above the spiracles, all small. The head is retracted within joint 2, and this in turn under joint 3. There is a double row of blackish impressed spots in the dorsal region and elliptical depressions on the sides, but the skin is nearly uniform, soft and smooth. Color greenish brown, lighter, more reddish posteriorly, shaded on the dorsum with dark orange; a number of indistinct, brighter waved lines. Below colorless, bordered by a salmon colored band.

* Mr. Henry Edwards has called my attention to a fact which I have recently verified, viz., that Herrich-Schäffer's figure of *chloris* represents the species known as *Parasa fraterna* Grote. Hence the synonymy will have to be altered as above.

Closely related to *Euclea* is the genus *Adoneta* Clem., but in our lists it has not been associated with its allies. It differs from *Euclea* in the shorter pectinations of the antennæ of the male and the more slender body. The shape of the wings and pattern of maculation are the same, but the venation differs in that *Adoneta* has but four subcostal venules, while *Euclea* has five in the fore wings, and the subcostal vein in the hind wings divides nearer the tip of the wing in *Adoneta*. These are all weak characters.

The larvæ are of the same structural type in both genera, but that of *Adoneta* is more highly colored.

From a consideration of characters, drawn principally from the larva, I would arrange the genera of the Cochlidie somewhat as follows, omitting the genera of which I do not know the larva :

Parasa	Phobetron	{ Lithacodes
{ Euclea	Isa	{ Tortricidia
{ Adoneta	Limacodes	
Empretia	Packardia	

L. flexuosa and *L. cæsonia* of Grote, do not belong to *Limacodes*, and will probably have to be referred to *Heterogenea* or an allied genus, as, indeed, Mr. Grote has himself suggested.*

Varina ornata Neum., in my opinion, does not belong to the Cochlidie.† I have examined a ♀ specimen which Mr. Graef has kindly loaned me, and a ♂ from Prof. Smith. If the moth is a bombycid at all, it will have to be referred to the Dasychiræ as its characters exclude it from the other subfamilies. I would add the following characters to Mr. Neumoegen's description of the genus :

Primaries 12-veined ; internal vein not furcate at base ; median 4-branched, vein 5 nearer to 4 than 4 to 3 at base ; cell open ; 6 arising from cross-vein near the subcostal ; a small, narrow accessory cell ; 7 from 8 immediately beyond accessory cell ; 8 and 10 together from end of accessory cell ; 9 from 8, rather more than half as long as 8. In the secondaries 3 and 4 arise together from the end of the median ; cell open ; 5 absent, represented by a fold ; 7 from 6 beyond the end of cell ; 8 touches the subcostal at about one-sixth the length of cell from base

Tongue present, but weak ; ocelli small. The thorax is covered with scales and hair, and not hair alone, as Mr. Neumoegen states.

A knowledge of the larva of *V. ornata* is much to be desired.

* New Check List. page 63. I think that *cæsonia* may prove to be synonymous with *Heterogenea shurtleffii* Pack. *Flexuosa* is congeneric, and may be only a form of *cæsonia*.

† See Mrs. Slosson, Ent. Amer. vi, 136.

Artaxa ingenita Hy. Edwards does not belong in the *Cochlidia*, but is also referable to the *Dasychiræ*.*

Monoleuca subdentosa n. sp. (Plate iv, fig. 21)

Allied to *M. semifascia* (fig. 20). Thorax and primaries dark walnut-brown; abdomen, secondaries and under side paler. A narrow, upright, zigzag, white line extends from the middle of internal margin to median vein, but does not cross the vein nor extend on to the fringe as does the corresponding mark in *semifascia*. It is twice regularly angulated, more sharply externally. The space between this mark and the base of the wing is of a ferruginous brown, paler than the rest of the wing and narrowly separated from the white mark by the ground color. Expanse 22 mm.

Type, one ♀, in the collection of Mr. Graef.

The species of *Monoleuca* may be separated as follows:

Transverse band upright.

Band white.

Band narrow, preceded by a ferruginous shade.....***subdentosa*** Dyar.

Wider; wing concolorous.....***semifascia*** Walk.

Band yellow.....***sulfurea*** Grote.

Transverse band oblique.....***obliqua*** Hy. Edw.

Genus **PACKARDIA** G. and R.

This genus was characterized by Dr. Packard, in 1864,† as *Cyrtosia*, but this name, being preoccupied, was subsequently changed by Grote and Robinson.

The species are subject to considerable variation, and are usually rare. I have examined the male genitalia of three species and I cannot find that they offer any characters to afford specific separation. The supra-anal plate in all narrows rapidly, and is extended backward in a long, even, narrow prolongation that slopes downward without curving, being pilose beneath. It resembles the same part in *Datana*, but is much less strongly bent down. The side pieces are simple, concave inwardly, slightly tapering, the ends rounded. The larvæ are small green *Limacodes*, much resembling *Parasa fraterna* in general shape, but lacking the spinose subdorsal tubercles. The end of the body is produced into a little "tail" as in *Parasa*, which is often marked with red above, and this constitutes the only colored marking. They feed on the leaves of any deciduous tree, usually frequenting the central or more shaded parts of the woods. Only one brood occurs each year in New York, the larvæ maturing in September.

Dr. Packard has kindly allowed me to see his material in this genus, and I believe the following arrangement of species corresponds with his opinion.

* See Butler, Ann. Mag. N. H. 1884, p. 200.

† Proc. Ent. Soc. Phil. iii, 342.

Packardia elegans Packard (Plate iv, fig. 22).1864.—Pack., Proc. Ent. Soc. Phil. iii, 342, *Cyrtosia*.*nigripunctata* Goodell.1881.—Good. Can. Ent. xiii, 30. *Packardia*.

Primaries blackish or bronzy brown, with two parallel, oblique, white bands, the inner from the basal third of the inner margin to near the center of the costa, shaded outwardly with black; the outer from basal two-thirds of inner margin to opposite the end of median vein, where it is joined by a third curved white band that runs from the costa just beyond the end of the first band to the internal angle, where it becomes faint, obsoletely enclosing two round, superposed black spots. Both bands are faintly shaded inwardly with black. Secondaries whitish, strongly tinged with bronzy brown. Expanse of wings 19 mm.

The inner white band is fainter than the two outer ones (while its bordering black shade is more distinct), and Mr. Goodell's *nigripunctata* is founded on examples in which it is obsolete.

Curiously enough this species has been omitted from both the Brooklyn Check List and Mr. Grote's New Check List, as well as from Mr. Hy. Edwards' additions to the same (Ent. Amer. vol. iii).

Packardia fusca Packard.1864. — Pack., Proc. Ent. Soc. Phil. iii, 343, *Cyrtosia*.

Primaries whitish buff, consisting of a dull white ground "dusted with ocherous brown scales, thickest at the base of the wing." The markings are exactly as in *elegans*, but much more obscure, in some examples hardly discernible. The white bands are scarcely paler than the ground color being defined by the ocherous scales; the outer dark shade of the inner band and the round superposed spots at the internal angle are ocherous brown, in one example quite well defined. Secondaries very pale, darker along the outer margin. Expanse of wings 16—19 mm.

Packardia geminata Packard (Plate iv, fig. 23).1864.—Pack., Proc. Ent. Soc. Phil. iii, 343, *Cyrtosia*.

Primaries chalky white, irrorate with chocolate-brown scales and thickly dusted with ocherous brown scales at the base of the wing and internal angle. Two parallel, oblique, chocolate-brown bands, the inner somewhat undulate, reaching from the basal third of the inner margin to near the center of costa, the outer from the basal two-thirds of inner margin till it joins a third curved band, which extends from the costa just beyond the end of the first band to just above the internal angle, where are three superposed, rounded, triangular white spots, the lower one very small, all narrowly surrounded by chocolate-brown. In the single example before me the space between the first two bands is strongly filled in with chocolate-brown, especially on the costal half of the wing, and this shade spreads outward diffusely beyond the third band in the center of the wing. Secondaries even paler than the primaries, dusted with brown scales. All the fringes are narrowly lined at base and near tip with chocolate-brown. Expanse of wings 26 mm.

Larva.—Pale, or whitish green with four longitudinal slight elevations or ridges, viz.: one subdorsal and one supra-stigmatal on each side; the body terminating in a short tail. The subdorsal ridge is darker green than the body, and is bordered below with whitish.

Cocoon.—As in the other species of *Cochlidia*, subspherical, hard and brown, the end opening as a little circular lid.

Packardia albipunctata Packard (Plate iv, figs. 24, 25).

1864.—Pack., Proc. Ent. Soc. Phil. iii, 344, *Cyrtosia*.

ocellata Grote.

1865.—Grote, Proc. Ent. Soc. Phil. iv, 322, *Cyrtosia*.

The ground color of the primaries is the same as in *geminata*, the lines and superposed white spots are the same (though in one example there is a trace of a fourth white spot), but the ocherous brown or sable brown and chocolate-brown shadings are more extensive, while the secondaries are pulverulent dark blackish brown. A male example before me (fig. 25) has the basal space filled in with sable brown, the rest of the wing chocolate-brown, obscuring the lines, except a subquadrate apical space, where the white ground color prevails, irrorate with brown scales. Fringe paler at base. The female (fig. 24) has a basal ocherous brown shading, but the chocolate-brown shade is confined to the space enclosed by the second and third bands at the internal angle, leaving the ground color to appear on the rest of the wing. Fringe ocherous. Expanse 23—27 mm.

Mr. Grote's *ocellata* was apparently founded on examples similar to the female I have described above.

Larva.—Extremely similar to that of *geminata*. I have not noted any differences.

Cocoon.—Not different from that of *geminata*.

Packardia goodellii Grote.

1880.—Grote, Can. Ent. xii, 242, *Packardia*.

It seems probable that this species is only a very dark variety of *P. albipunctata*, but I have not seen enough specimens to be able to decide. Mr. Grote's description is substantially as follows, and well characterizes this form:

"Entirely blackish, with a faint brown shading about internal angle, where are two white, unequal spots. Fringe blackish, concolorous, interlined with pale and with a distinct white fleck below apices. The usual lines on the primaries are lost in the ground color; the outer may be made out, followed by a whitish shade on costa. The costal edge at apices is whitish. Secondaries concolorous, blackish, paler beneath; the fringe is paler outwardly. Expanse 20—22 mm."

The species of *Packardia* may be separated by the following table:

Spots above internal angle of primaries black or blackish.

Fore wings bronzy brown.....**elegans** Pack.

Fore wings whitish buff.....**fusca** Pack.

Spots above internal angle of primaries white.

Secondaries white.....**geminata** Pack.

Secondaries black.

Fore wings partly obscured by dark chocolate-brown shadings.

albipunctata Pack.

Fore wings entirely dark brown.....**goodellii** Grote.

